*SONNET**

Commemorative of an Incident which occurred in St. Margaret's Church, Westminster, on August 9, 1888.

BEFORE the altar Man and Maid they stood,
On altar-step as Man and Wife then kneeled–
Its Heaven-lent strains the sacred Organ pealed,
Moulding thoughts, hopes, and passions as it would,
Till all hearts swam in one melodious flood.
When as rapt Fancy wandered far a-field
Lo! Eve's fresh bower stood to her sight revealed
Where hung upon the spray a pure white bud—
The bride's half-sister on her nurse's breast–
Fair-writ indenture of prevenient Mind,
An Imogene stole back from far Dream-land
(Spirit of womanhood by a child possessed!)
O'er whose soft gaze, as Ocean deep, inclined
My lips with reverence, kissed her dimpled hand.

New College, Oxford, August 26. J. J. S.

NOTES.

PROF. PIAZZI SMYTH has resigned the office of Astronomer-Royal for Scotland, and no one who takes the trouble to read the second appendix to a paper on "The Edinburgh Equatorial in 1887," contributed by him lately to the Proceedings of the Royal Society of Edinburgh, and now reprinted, will be surprised at his decision. Before he consented to join in the project of the Board of Visitors, about 1870, of applying to the Government for a large equatorial, Prof. Piazzi Smyth pointed out that such an instrument, even if once set up complete, would require further expenditure year after year to keep it fully efficient, and that the working with it would be so peculiarly onerous and responsible that the salaries of the officers of the Royal Observatory, Edinburgh, already acknowledged to be at, or below, starvation point, should be raised more nearly to the level of those of other Observatories or of any ordinary Government offices. He was told that all that was most certainly right, and would be brought about; and the Board of Visitors did most honourably proceed to frame a scheme providing for a modest addition not only to the observers' salaries, but to the available income of the Observatory, to be expended by the Astronomer in instrumental repairs, experiments, and improvements at his discretion. Under these promising circumstances he acted with the Board in their application for a large equatorial. The instrument was in part set up, under the authority of the Office of Works, in 1872; but in the following year, when the erection was found very incomplete, the scheme of the Board of Visitors for increasing the salaries and available income of the Observatory to a point sufficient to finish, maintain, and work the instrument, was suddenly and finally disallowed. A Committee, appointed in 1876 by Mr. (now Lord) Cross to investigate the matter, reported for a series of financial improvements similar to those suggested by the Board of Visitors; but the Home Secretary declined to listen to his own Committee. Another Committee was appointed in 1879. This Committee did not admit the Astronomer to its council, and limited its inquiries to the equatorial. It advised certain improvements, and obtained a grant for executing them; but the grant either still remains in the possession of the Office of Works or has lapsed to the Treasury—a fact which is the less to be regretted as the sum was absurdly inadequate. It would be hard to match this wretched tale in any other civilized country; and we can scarcely expect that science will continue to flourish in Great Britain if its claims are to be treated with so much contempt. Prof. Piazzi Smyth, having withdrawn from his position at Edinburgh, retires to Clova, Ripon, where he will continue his astronomical studies. Warm appreciation of his services during the forty-three years in which he has held office has been expressed on behalf of the Secretary for Scotland, and by the Senatus Academicus of the University of Edinburgh.

THE British Archæological Association, of which the Marquess of Bute is this year the President, began its sittings in Glasgow on Monday. Although this is the forty-fifth annual Congress, it is the first occasion on which the Association has crossed the border.

THE Association of Public Sanitary Inspectors of Great Britain held on Saturday, by invitation of the Mayor (Alderman Martin), a public conference on sanitation in the Royal Pavilion, Brighton. An address by Mr. Edwin Chadwick, the President, who could not be present on account of his advanced age, was read by Dr. B. W. Richardson. The address presented an interesting general view of the recent progress of sanitation in this country.

MR. WILLIAM CHAPPELL, F.S.A., who died on the 20th inst. at his residence in Upper Brook Street, was known chiefly for his efforts to popularize old English music; but he deserves to be remembered also as an ardent student of music in its scientific aspects. He had a wide and accurate knowledge of the natural laws on which the principles of musical composition are based, and his book on the History of Music, both as an Art and as a Science, is of great value. Mr. Chappell was seventy-eight years of age.

MR. P. H. GOSSE, F.R.S., the well-known zoologist, died at his residence, St. Marychurch, Torquay, on the 23rd inst., at the age of seventy-eight. Mr. Gosse was elected a Fellow of the Royal Society in 1856.

MR. WILLIAM A. CROFFUT has been appointed executive officer of the United States Geological Survey, in the place of the late Mr. James A. Stevenson. Mr. Croffut is a well-known journalist, and *Science* anticipates that he will fill with success the difficult position in which he is placed.

CAPTAIN H. FABRITIUS, of the Norwegian Hydrographical Office, is engaged during the present summer in the steamer *Professor Hausteen* in making hydrographical researches on the west coast of Norway, similar to those of last year. The course followed is from Malangen southwards, soundings being taken at about every mile to a distance of some sixty miles from the coast.

SEVERAL recent shocks of earthquake are reported from Norway and Sweden. In the former country an earthquake shock of great severity was felt in various parts of Hardanger, on the west coast, shortly after midnight on July 17. Houses were shaken, and furniture was thrown down. In one place three shocks were felt. The earthquake was accompanied by loud subterranean rumblings. Its area seems to have been very limited: in places only a few miles distant no trace of disturbance was perceived. On July 28, about 3 a.m., a very severe shock of earthquake was felt along a great portion of the northern Baltic shore of Sweden. At Hernösand, Örnsköldsvik, and Lungön, the shocks are reported as particularly severe, houses shaking, &c. In some places two or three shocks were felt, lasting, so correspondents maintain, several minutes. In every place loud subterranean detonations were heard. Again, on the evening of August 17, during a hurricane, a severe earthquake shock was felt in the neighbourhood of Ystad in Scania, in the extreme south of Sweden.

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* This sonnet would furnish an unrivalled new situation and a noble subject for a young painter with lofty aims (if such there be among us) to depict. In the church invited to participate in the sacred rite were Star-gazers, Wonder-workers, and Magi (the Darwins, the Thomsons, and the Cayleys), who may be supposed in the person of their representative to be doing homage to the Spirit of Womanhood incarnated in the infant held in the arms of her proud and comely nurse, from whom I learned that the child's name was Imogene.

ON the morning of August 17, about 3 a.m., a remarkable phenomenon attracted attention at the Island of Rügen, in the Baltic. A deep rumbling out at sea was heard, and soon afterwards two enormous waves approached from the north-west, breaking over the shore and doing considerable damage to small craft. At the time the sea was calm, and there was no wind.

ON the night of July 31 a brilliant meteor was seen at Linköping, in Sweden, going in a north-westerly direction. It finally burst, the fragments appearing to fall near the railway park.

Symons's Monthly Meteorological Magazine for August contains an interesting summary of the climate of the British Empire during 1887. Comparing with the summary for 1886, Stanley, Falkland Isles, takes the place of London, as the dampest station. Adelaide has the highest shade temperature, 111°·2; the highest temperature in the sun, 164°; and is the driest station. Winnipeg has the lowest shade temperature, –42°·7, and the greatest yearly range, 135° 9. Bombay has the greatest rainfall, and Malta the least, and also the least cloud. Although the maximum shade temperatures in Australia exceed those in India, the *average* maxima of the latter far exceed those of Australia.

THE Pilot Chart of the North Atlantic Ocean for August shows that although the weather over that ocean was generally fine and very mild during July, a number of depressions were generated, and produced gales over the trans-Atlantic routes. The most violent was one which developed on June 27, in about latitude 42° and longitude 52°, reaching our coasts on July 4. A wind-force as high as 11 of the Beaufort scale was recorded during its course. Dense continuous fog was encountered over and to the westward of the Grand Banks. Large quantities of ice have been reported as far west as the 60th meridian. The tracks of all the most notable August hurricanes on record are plotted on the chart, and show where these dangerous cyclones are likely to be encountered. A supplementary chart showing the derelicts in the North Atlantic, gives also the complete history up to date of the great log raft which was abandoned last December. This most dangerous obstruction to navigation consisted of about 27,000 trunks of trees bound together, and measured 560 feet long. Thousands of the great logs of which it was composed are still drifting over the commercial routes.

IN the *American Meteorological Journal* for July, Lieut. Glassford describes a new wind vane in use at the California State University. The design is said to possess novel advantages, such as supporting all the weight upon a point, like a compass-card, an oil vessel into which paddles dip to lessen the suddenness of vibration, &c. It may here be mentioned that anemometers with liquid brakes have also been made in this country. Mr. Rotch contributes an article on the Observatory on the Säntis, in Switzerland. The observations of this mountain station are regularly published in the *Annalen* of the Swiss Central Meteorological Office. Mr. F. Waldo gives an abstract of the results of comparisons of several of the combined cistern-syphon barometers, known as the Wild Fuess check barometers. These portable instruments have been for some time in use in Russia, and some of them are now introduced into the United States Signal Service. The full account of the comparisons was prepared for the Chief Signal Officer's Report, but is not yet printed.

DR. G. N. STEWART, Owens College, sent recently to the Royal Society of Edinburgh a preliminary communication on the electrolytic decomposition of proteids. He pointed out that it is an important question whether the conduction of electricity by animal tissues is mainly or entirely electrolytic. If it is mainly electrolytic, the further question becomes interesting, What are the electrolytes? The inquiry is thus brought into relation with the whole of electro-physiology on the one hand, and the whole of electro-therapeutics on the other, and, at the present moment, it gains special interest from the practical point of view, in connection with the recent introduction of strong currents into gynæcological treatment. The investigation is as yet far from being complete, and Dr. Stewart is at present carrying on the experiments. In the case of egg-albumen it has been found that the resistance at any given temperature is not changed by coagulation, but that it is enormously increased by dialysis. The conclusion is that it is, mainly at any rate, by the electrolysis of the simple inorganic constituents that the current passes.

A THIRD edition of Prof. Silvanus P. Thompson's "Dynamo-Electric Machinery" (E. and F. N. Spon) has just been issued. Most of the treatise has been rewritten for this edition, and much new matter has been added.

THE University College of North Wales has issued its Calendar for the year 1888–89.

IN the Annual Report, for the year 1887, of the Trustees of the American Museum of Natural History, Central Park, New York City, it is stated that the collections of this Museum are now valued at the sum of about 600,000 dollars. "It is but right to say," add the Trustees, "that of this large amount your Trustees have been the main contributors. The necessity of adding to these collections increases as time goes on, and it is hoped that more of our citizens will take an earnest and increased interest in our Museum, and so aid the Trustees in making this institution what it should be and what our city has a right to expect—the great museum of the country."

IN a letter written on board the seal-ship *Jason* in the Denmark Sound, Dr. Nansen draws attention to the scarcity of seals on the coast of Greenland in recent years. Only ten years ago the animals were so plentiful and tame that thousands could be "clubbed" with the greatest ease, whereas now they have become scarce and shy. Dr. Nansen is of opinion that the ruthless persecution of these animals since 1876, when the first sealer appeared in the Denmark Sound, has caused them to alter their habits. Formerly they were found on the edge of the drift-ice, where they were safe from their only enemy, the Polar bear, though falling an easy prey to the sealer. Now they gather on the ice close to the shore, whither vessels cannot penetrate, and where they are, at all events, safe from one enemy. This, says Dr. Nansen, was fully demonstrated on several occasions, particularly on July 2, when seals were seen lying in thousands close under the shore to the north and north-east as far as the eye could reach from the mast head. To the north especially the ice was for miles one mass of dark animals. Dr. Nansen advocates a closer preservation of the seal. The seal fishery was a failure this year, and sealers report that the ice-masses were enormous.

THE additions to the Zoological Society's Gardens during the past week include three Black-headed Lemurs (*Lemur brunneus*) from Madagascar, presented by Captain J. Bonneville; a Ring-tailed Coati (*Nasua rufa*) from South America, presented by Captain James Smith; a Razorbill (*Alca torda*), British, presented by Mr. T. H. Nelson; a Nightingale (*Daulias luscinia*), British, presented by Mr. J. Young; an American Wild Turkey (*Meleagris gallo-pavo* ♂) from North America, presented by Mr. F. J. Coleridge Boles; a Raven (*Corvus corax*), British, presented by Mr. F. Steinhoff; two Pallas's Sand Grouse (*Syrrhaptes paradoxus*), bred in Fifeshire, N.B., presented by Mr. Alexander Speedie; a Macaque Monkey (*Macacus cynomolgus* ♂) from India, a Lesser White-nosed Monkey (*Cercopithecus petaurista* ♀) from West Africa, a Vulpine Squirrel (*Sciurus* *vulpinus*) from North America, deposited; two Great White Herons (*Ardea alba*), European, purchased; a Moor Monkey (*Semnopithecus maurus*) from Java, a Malabar Squirrel (*Sciurus maximus*) from India, a Red-bellied Squirrel (*Sciurus variegatus*) from Vera Cruz, a Sclater's Curassow (*Crax sclateri* ♀) from South America, a River Jack Viper (*Vipera rhinoceros*) from West Africa, received in exchange; a Wapiti Deer (*Cervus canadensis* ♂), five Brazilian Teal (*Querquedula brasiliensis*), two Chilian Pintails (*Dafila spinicauda*), two Triangular Spotted Pigeons (*Columba guinea*), three Chinese Blue Magpies (*Cyanopolius cyanus*) bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE SPECTRUM OF R CYGNI.—The Rev. T. E. Espin, in Circular No. 21 of the Wolsingham Observatory, reports that he observed a remarkably bright line (apparently F) in the spectrum of this star on August 13. The observation was confirmed on August 22, on which night Dr. Copeland also observed the bright line and determined its position. Dunér's observations of this star in 1879, 1880, and 1882 showed it as possessing a feebly-marked spectrum of the third (Secchi's) type. A change would therefore seem to have taken place in this star. Place for 1887·0, R.A. 19h. 33m. 49s., Decl. 49° 57′·0 N.

MILAN DOUBLE-STAR OBSERVATIONS.—Prof. Schiaparelli has recently published, in No. xxxiii. of the Publications of the Royal Observatory of Brera, the results of his measures of 465 systems of double stars made with the fine 8-inch Merz refractor of that Observatory in the eleven years 1875–85. The observations are nearly 4000 in number, and are for the most part of stars of small distances, *i.e.* less than 5″, apart, the binaries in rapid motion receiving especial attention. The measures are grouped together into four parts, the stars of the Dorpat and Pulkowa catalogues forming the first two, then follow stars discovered by Burnham, and those of other discoverers are grouped together in the last. Besides these detailed results of the measures made with the old 8-inch, with which Prof. Schiaparelli has done so much excellent work in the past, there are given in an appendix mean results for a number of the closest pairs as measured with the new 18-inch refractor. Prof. Schiaparelli seems well satisfied with the performance of this new instrument, and records the discovery that the principal star of Σ 1273, ε Hydræ, is itself a very close double, a fact that had hitherto escaped notice, notwithstanding the number of observations which have been made with various telescopes upon the star. The magnitudes of the two components of the new double are 4 and 5·5, and the distance is 0″·2 or 0″·25. The earlier part of the volume contains a detailed description of the optical performance of the 8-inch refractor, a discussion of the errors of the micrometer and of the accidental errors of observation, a determination of the systematic errors of observation, and a very full comparison with Dembowski's measures. The differences in the determination of position-angle due to the varying inclination of the line joining the two stars to the line of the observer's eyes are also investigated, but the reversion prism was not used. Prof. Schiaparelli finds that on the whole his measures of distance are free from systematic errors due to personality, but his position-angles have a tendency to be small as compared with those of other observers.

Amongst the notes to some of the more interesting stars is one on OΣ 285 in which a correction of 180° is suggested to the angles of Englemann and Perrotin in 1883 and 1885, the star being supposed to have passed rapidly through periastron in the long period from 1865 to 1883, in which it was unobserved. All the observations would then be satisfied by an ellipse of 100 years of revolution. Σ 2367 and Σ 2525 are noted as appearing as single stars with the 18-inch refractor in 1887.

ENCKE'S COMET.—Mr. John Tebbutt, Windsor, New South Wales, informs us that he picked up this object on the evening of July 8. Its place as observed closely accorded with that given in Dr. Backlund's ephemeris.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1888 *SEPTEMBER* 2–8.

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on September 2

Sun rises, 5h. 17m.; souths, 11h. 59m. 21·6s.; sets, 18h. 42m.: right asc. on meridian, 10h. 47·6m.; decl. 7° 40′ N. Sidereal Time at Sunset, 17h. 31m.

Moon (New on September 6, 5h.) rises, 0h. 39m.; souths, 8h. 49m.; sets, 16h. 55m.: right asc. on meridian, 7h. 37·2m.; decl. 20° 54′ N.

Planet.	Rises.		Souths.		Sets.		Right asc. and declination on meridian.			
	h.	m.	h.	m.	h.	m.	h.	m.	°	′
Mercury..	6	2 ...	12	33 ...	19	4 ...	11	21·6 ...	5	28 N.
Venus.....	6	35 ...	12	55 ...	19	15 ...	11	43·3 ...	3	12 N.
Mars......	12	26 ...	16	39 ...	20	52 ...	15	27·8 ...	20	24 S.
Jupiter....	12	38 ...	16	58 ...	21	18 ...	15	47·5 ...	19	19 S.
Saturn....	2	43 ...	10	19 ...	17	55 ...	9	6·9 ...	17	19 N.
Uranus ...	8	33 ...	14	9 ...	19	45 ...	12	57·5 ...	5	29 S.
Neptune..	21	28*...	5	15 ..	13	2 ...	4	2·4 ...	18	59 N.

* Indicates that the rising is that of the preceding evening.

Occultations of Stars by the Moon (visible at Greenwich).

Sept.	Star.	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image.	
			h. m.	h. m.	°	°
2 ...	61 Geminorum ..	6 ...	0 4 ..	0 50 ...	84	216
3 ...	B.A.C. 2854 ...	6 ...	4 54	near approach	135	—

Sept.	h.	
4 ...	1 ...	Saturn in conjunction with and 0° 34′ south of the Moon.
7 ...	0 ...	Mercury in conjunction with and 3° 46′ south of the Moon.
7 ...	7 ...	Venus in conjunction with and 3° 32′ south of the Moon.

Variable Stars.

Star.	R.A.	Decl.				
	h. m.	° ′			h. m.	
λ Tauri...	3 54·5 ...	12 10 N. ...	Sept.	4,	20 26	*m*
ζ Geminorum ...	6 57·5 ...	20 44 N. ...	,,	8,	21 0	*m*
δ Libræ	14 55·0 ...	8 4 S. ...	,,	6,	21 42	*m*
V Ophiuchi... ...	16 20·5 ...	12 10 S. ...	,,	6,		*M*
U Ophiuchi... ...	17 10·9 ...	1 20 N. ...	,,	4,	1 15	*m*
			,,		21 22	*m*
W Sagittarii ...	17 57·9 ...	29 35 N. ...	,,	8,	1 0	*m*
β Lyræ...	18 46·0 ...	33 14 N. ...	,,	7,	23 0	m_2
R Lyræ	18 51·9 ...	43 48 N. ...	,,	2,		*M*
S Vulpeculæ ...	19 43·8 ...	27 1 N. ...	,,	2,		*M*
η Aquilæ	19 46·8 ...	0 43 N. ...	,,	7,	0 0	*M*
R Sagittæ	20 9·0 ...	16 23 N. ...	,,	6,		*m*
X Cygni	20 39·0 ...	35 11 N. ...	,,	5,	3 0	*M*
T Vulpeculæ ...	20 46·7 ...	27 50 N. ...	,,	2,	3 0	*M*
δ Cephei	22 25·0 ...	57 51 N. ...	,,	4,	1 0	*m*

M signifies maximum; *m* minimum; m_2 secondary minimum.

Meteor-Showers.

	R.A.	Decl.	
	°	°	
Near Algol	43 ...	39 N. ...	Swift; streaks.
,, ε Lyræ	282 ...	42 N. ...	Swift; bright.
,, β Piscium	345 ...	1 N. ...	Slow; bright.

GEOGRAPHICAL NOTES.

THE current number of the Proceedings of the Royal Geographical Society contains the report of his first year's work by Mr. Mackinder, the Reader in Geography to the University of Oxford, whose appointment is due to the Society. He describes the year as one of reconnoitre and preparation; nevertheless he delivered forty-two ordinary lectures in the University, and one public lecture; in each of the three terms he lectured for seven weeks twice a week, having two courses going on side by side on different days, to one of which he imparted a scientific, to the other an historical bias. The notices were, by permission of the Board of Faculties, published in the lists of two separate Faculties—Natural Science and Modern History. On the scientific side the lectures have been on the principles of geography—"a review of the subject not merely physical, yet taking the feature, and not the region, as the basis of classification." This course has not been so well attended as the other, but Mr. Mackinder congratulates himself that he has never been wholly without an audience, "a fate not altogether unknown just now to Oxford Professors and Readers." On the historical side the lectures were on the geography of Central Europe, and the influence of physical features on man's movements and settlements. "My aim is